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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,449	08/03/2006	Henrik Lundquist	10581.204-US	2788

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NOVOZYMES NORTH AMERICA, INC.
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NEW YORK, NY 10110

EXAMINER

BADR, HAMID R

ART UNIT	PAPER NUMBER
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1781

NOTIFICATION DATE	DELIVERY MODE
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07/21/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Patents-US-NY@novozymes.com

Office Action Summary	Application No. 10/588,449	Applicant(s) LUNDQUIST ET AL.	
	Examiner HAMID R. BADR	Art Unit 1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Objection to Claims

1. Applicants' amendment filed 4/23/2010 is acknowledged.
2. Claim rejection under 35 USC 112 second paragraph is withdrawn per Applicants' amendment.
3. Claims 1-19 are being considered on the merits.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dutron et al. (WO/2004/023879, hereinafter R1) (submitted by applicants as prior art)
6. R1 discloses the incorporation of xylanases into the dough to improve the baking properties of the baked product (Abstract).
7. R1 discloses that one the preferred xylanases is the xylanase of *Bacillus halodurans* C-125 or those obtained from the corresponding gene expressed in a suitable host [0024, and Example 2].
8. R1 discloses that other bread improving agents, including enzymes, can be added to the dough [0026]. R1 teaches that among other enzymes, maltogenic amylase can be used with xylanase [0027]. R1 gives the details of cloning the enzyme [0046].

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9. R1 discloses that the application of xylanase in baking improves or increases texture, flavor, anti-staling effects, softens crumb, dough machinability and volume of the finished product. [0054].

10. R1 teaches of using the xylanase in the form of dry powder, granulate, liquid etc.

11. Despite the fact that applicants have provided specific polypeptide and DNA sequence IDs for xylanase disclosed and claimed in baking process, this does not provide a patentable distinction over those disclosed by R1 as also having dough improving activity and use in baking. It is clear that, based on the teachings of R1, the inclusion of endoxylanase in dough and baking processes was known at the time the invention was made. Alternatively, given the specific teachings of R1; one would have been motivated to routinely screen out a xylanase enzyme and characterize it through the amino acid sequence or the DNA sequence encoding the polypeptide, according to well-established methods known in the art, and utilize such xylanase within the known methods of R1; absent any clear and convincing evidence and/or arguments to the contrary. The USPTO does not possess the facilities to test each xylanase and use it in baking. However, a reasonable rejection has been set forth and thus the burden shifts to applicant to demonstrate that the xylanase of the reference is not, in fact, the same as that of the claimed xylanase regarding the activity on arabinoxylans in flour, the consequent improvement in dough properties and the resulting quality of the baked product.

12. The inclusion of xylanases into dough to improve its properties or the properties of the baked product is disclosed by R1. R1 further teaches of including further

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enzymes including the maltogenic amylase into the dough formulation. R1 discloses the various forms and compositions containing the xylanase and additive enzymes.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to add xylanase to dough and bakery products to improve their properties. Polypeptide and DNA sequences of any source could have been prepared and cloned by artisans following established techniques in the art. One skilled in the art would expect the recombinant and natural enzymes to be the same regardless of the manner in which they were made, and they would be expected to provide the same enzymatic activity, effect, etc. Absent any evidence to contrary and based on the teachings of the reference used, there would be a reasonable expectation of success to make xylanase and use in dough formulations.

Response to Arguments

Applicants' arguments have been considered. These arguments are not deemed persuasive for the following reasons.

1. Applicants argue that the structures of the claimed xylanase and that of the reference are different and that xylanase of R1 has low sequence identity of only approximately 8% to the xylanase of Applicants' claims.
 - a. Regardless of the structural differences which may exist between the claimed sequences and those disclosed by the cited reference, arising from screening various sources for xylanase and cloning the encoding DNA sequences, there is no inventive step demonstrated by Applicants. As discussed above the incorporation of xylanase into a dough for baking to improve the rheological properties of dough and/or baking

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qualities was known at the time the invention was made. Screening methods for xylanases of any source together with well-established recombinant methods were also known in the art. Therefore, the screened out and cloned xylanase was expected to have the same properties, regarding dough improvement, as disclosed by R1 regardless of the method it was produced by.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAMID R. BADR whose telephone number is (571)270-3455. The examiner can normally be reached on M-F, 8:00-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hamid R. Badr
Examiner
Art Unit 1781

/Keith D. Hendricks/
Supervisory Patent Examiner, Art Unit 1781